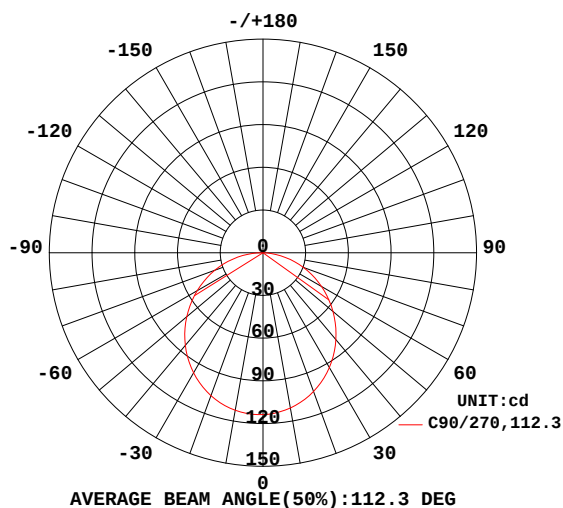


LUMINAIRE PHOTOMETRIC TEST REPORT

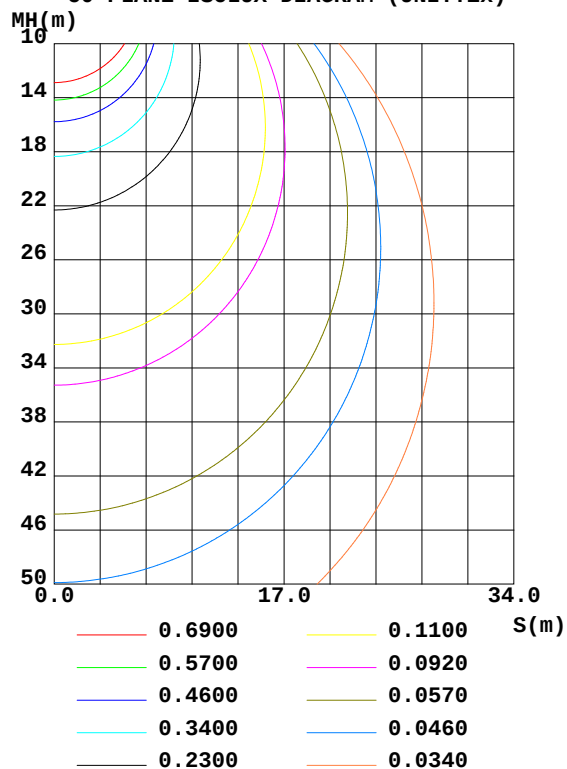
NAME: C-SFR-F2222S12-HB-24CC-RGB-WM-84-16.5W-83.3-G	WEIGHT: 0.590kg/m
SPEC.:	SERIAL No.:
MFR.: CLEAR	Shielding Angle:

DATA OF LAMP		PHOTOMETRIC DATA Eff: 52.65 lm/W			
MODEL	5050	I _{max} (cd)	114.5	S/MH(C0/180)	1.26
NOMINAL POWER(W)	16.5	LOR(%)	108.3	S/MH(C90/270)	1.27
RATED VOLTAGE(V)	24	TOTAL FLUX(lm)	336.60	η UP, DN(C0-180)	0.4, 52.0
NOMINAL FLUX(lm)	310.92	CIE CLASS	DIRECT	η UP, DN(C180-360)	0.5, 55.3
LAMPS INSIDE	1	η up(%)	0.9	CIBSE SHR NOM	1.25
TEST VOLTAGE(V)	24	η down(%)	107.4	CIBSE SHR MAX	1.35

LUMINOUS INTENSITY DISTRIBUTION DIAGRAM



C0 PLANE ISOLUX DIAGRAM (UNIT:lx)



C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Dillon
Test Date:22 July 2021

γ Range: 0 - 180DEG
γ Interval: 2.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:6.950m [K=1.0000]
Remarks:

ZONAL FLUX DIAGRAM

ZONAL FLUX DIAGRAM:

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	112.3	111.5	110.7	111.9	112.6	112.8	112.3	112.9	0- 10	10.81	10.81	3.21, 3.48
20	106.1	104.9	103.7	105.2	106.6	107.3	106.8	107.2	10- 20	30.93	41.73	12.4, 13.4
30	96.13	94.64	93.19	94.94	96.89	97.97	97.45	97.63	20- 30	46.78	88.52	26.3, 28.5
40	83.19	81.45	79.65	81.71	84.12	85.37	84.85	84.95	30- 40	56.33	144.8	43, 46.6
50	67.92	66.06	64.11	66.30	69.08	70.40	69.91	69.86	40- 50	58.52	203.4	60.4, 65.4
60	51.13	49.41	47.50	49.69	52.48	53.79	53.35	53.13	50- 60	53.49	256.8	76.3, 82.6
70	33.49	32.04	30.35	32.39	35.11	36.37	36.04	35.62	60- 70	42.30	299.1	88.9, 96.2
80	15.29	14.14	12.76	14.50	16.84	18.21	18.07	17.47	70- 80	26.40	325.6	96.7, 105
90	0.4883	0.8057	0.1973	1.022	1.222	1.881	1.850	1.292	80- 90	8.254	333.8	99.2, 107
100	0.4105	0.5926	0.1017	0.8071	1.216	0.8981	0.3859	0.4752	90-100	0.8116	334.6	99.4, 108
110	0.3673	0.4907	0.0370	0.6574	1.093	0.6621	0.3026	0.3070	100-110	0.5975	335.2	99.6, 108
120	0.4566	0.3890	0.0185	0.5570	0.9689	0.4060	0.0039	0.1467	110-120	0.4442	335.7	99.7, 108
130	0.4446	0.3564	0.0155	0.4861	0.8301	0.3796	0.0215	0.1667	120-130	0.3219	336.0	99.8, 108
140	0.3983	0.3224	0.0371	0.4274	0.6787	0.3425	0.0401	0.1866	130-140	0.2533	336.2	99.9, 108
150	0.3395	0.2685	0.0372	0.3748	0.5092	0.2855	0.0370	0.1589	140-150	0.1763	336.4	99.9, 108
160	0.2963	0.2208	0.0894	0.2870	0.3886	0.2484	0.0710	0.1682	150-160	0.1120	336.5	100, 108
170	0.2100	0.1790	0.1389	0.2282	0.2499	0.2006	0.1266	0.1283	160-170	0.0588	336.6	100, 108
180	0.1667	0.1574	0.1543	0.1435	0.1327	0.1651	0.1358	0.1481	170-180	0.0165	336.6	100, 108
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

Conical surface Flux(90deg): 180.17 lm

%lum = 53.5%

%lamp = 57.9%

Conical surface Flux(120deg): 256.85 lm

%lum = 76.3%

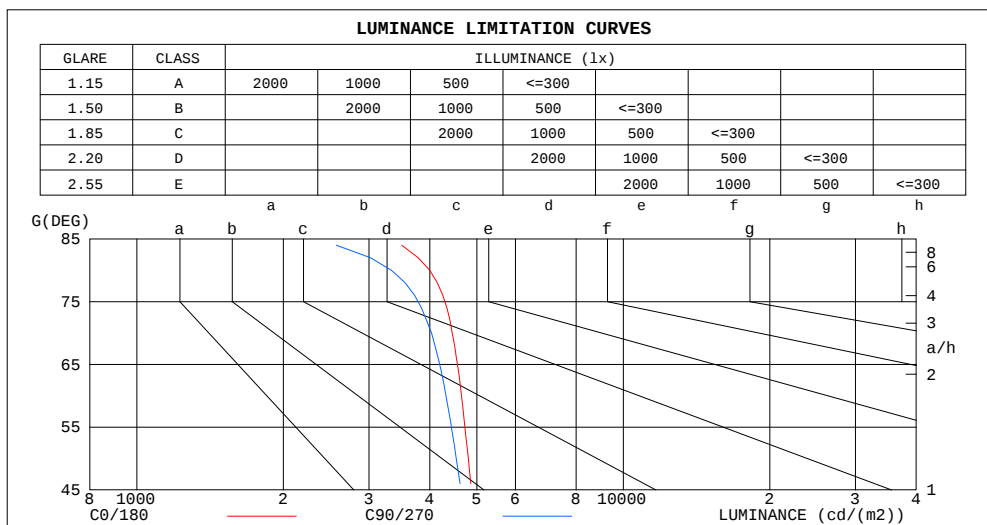
%lamp = 82.6%

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Dillon
 Test Date:22 July 2021

γ Range: 0 - 180DEG
 γ Interval: 2.0DEG
 Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.446
 Humidity:65.0%
 Test Distance:6.950m [K=1.0000]
 Remarks:

LUMINANCE LIMITATION CURVES

NAME: C-SFR-F2222S12-HB-24CC-RGB-WM-84-16.5W-83.3-TYPE:	WEIGHT: 0.590kg/m
SPEC.:	DIM.: 22*22mm
MFR.: CLEAR	SUR.: 22*1000mm
	Shielding Angle:



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: Dillon
 Test Date: 22 July 2021

γ Range: 0 - 180DEG
 γ Interval: 2.0DEG
 Test System: EVERFINE G0-2000B_V1 SYSTEM V2.00.446
 Humidity: 65.0%
 Test Distance: 6.950m [K=1.0000]
 Remarks:

WEC AND CCEC

NAME: C-SFR-F2222S12-HB-24CC-RGB-WM-84-16.5W-83.3-TYPE:	WEIGHT: 0.590kg/m
SPEC.:	SERIAL No.:
MFR.: CLEAR	Shielding Angle:

ρ_{cc}	80%			70%			50%			30%			10%			0			
ρ_w	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0			
ρ_{fc}	20%			20%			20%			20%			20%			0			
RCR	RCR:Room Cavity Ratio						Wall Exitance Coefficients(WEC)												
0.0																			
1.0	.347	.198	.063	.339	.194	.061	.324	.186	.059	.311	.179	.058	.298	.173	.056				
2.0	.324	.177	.054	.317	.174	.054	.303	.169	.052	.291	.163	.051	.280	.158	.050				
3.0	.298	.158	.047	.292	.156	.047	.280	.152	.046	.269	.147	.045	.259	.143	.044				
4.0	.274	.142	.042	.268	.140	.041	.258	.137	.041	.248	.133	.040	.239	.130	.040				
5.0	.252	.129	.037	.247	.127	.037	.238	.124	.037	.230	.121	.036	.222	.118	.036				
6.0	.234	.117	.034	.229	.116	.033	.221	.113	.033	.213	.111	.033	.206	.108	.032				
7.0	.217	.107	.030	.213	.106	.030	.206	.104	.030	.199	.102	.030	.192	.100	.029				
8.0	.202	.099	.028	.199	.098	.028	.192	.096	.027	.186	.094	.027	.180	.093	.027				
9.0	.190	.092	.026	.186	.091	.025	.180	.089	.025	.175	.088	.025	.170	.086	.025				
10.0	.178	.085	.024	.175	.085	.024	.170	.083	.023	.165	.082	.023	.160	.080	.023				

ρ_{CC}	80%			70%			50%			30%			10%			0
ρ_W	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0
ρ_{fC}	20%			20%			20%			20%			20%			0
RCR	RCR:Room Cavity Ratio			Ceiling Cavity Exitance Coefficients(CCEC)												
0.0	.213	.213	.213	.182	.182	.182	.124	.124	.124	.071	.071	.071	.023	.023	.023	
1.0	.203	.176	.151	.174	.151	.130	.119	.104	.090	.068	.060	.052	.022	.019	.017	
2.0	.194	.150	.112	.167	.129	.097	.114	.089	.068	.066	.052	.040	.021	.017	.013	
3.0	.186	.131	.087	.160	.113	.075	.110	.078	.053	.063	.046	.031	.020	.015	.010	
4.0	.178	.116	.070	.153	.101	.060	.105	.070	.043	.061	.041	.025	.020	.013	.008	
5.0	.170	.105	.058	.146	.091	.050	.100	.064	.035	.058	.037	.021	.019	.012	.007	
6.0	.162	.096	.049	.139	.083	.043	.096	.058	.030	.056	.034	.018	.018	.011	.006	
7.0	.154	.089	.043	.133	.077	.037	.092	.054	.026	.053	.032	.016	.017	.010	.005	
8.0	.147	.082	.038	.127	.072	.033	.088	.050	.023	.051	.030	.014	.017	.010	.005	
9.0	.141	.077	.034	.121	.067	.030	.084	.047	.021	.049	.028	.013	.016	.009	.004	
10.0	.134	.072	.031	.116	.063	.027	.080	.044	.019	.047	.026	.012	.015	.009	.004	

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Dillon
Test Date:22 July 2021

γ Range: 0 - 180DEG
 γ Interval: 2.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:6.950m [K=1.0000]
Remarks:

UGR(Unified Glare Rating) Table

NAME: C-SFR-F2222S12-HB-24CC-RGB-WM-84-16.5W-83.3-TYPE:					WEIGHT: 0.590kg/m					
SPEC.:					DIM.: 22*22mm			SERIAL No.:		
MFR.: CLEAR					SUR.: 22*1000mm			Shielding Angle:		
ceiling/cavity	0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
walls	0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions	Viewed crosswise					Viewed endwise				
x = 2H y = 2H	22.2	23.7	22.5	23.9	24.2	21.9	23.4	22.2	23.7	23.9
3H	23.8	25.3	24.1	25.5	25.8	23.5	24.9	23.8	25.1	25.4
4H	24.5	25.9	24.9	26.2	26.4	24.1	25.5	24.4	25.7	26.0
6H	25.1	26.3	25.4	26.6	26.9	24.6	25.8	24.9	26.1	26.4
8H	25.2	26.5	25.6	26.8	27.1	24.7	25.9	25.0	26.2	26.5
12H	25.3	26.5	25.7	26.8	27.1	24.7	25.9	25.1	26.2	26.5
4H 2H	22.8	24.1	23.1	24.4	24.7	22.6	23.9	22.9	24.2	24.5
3H	24.6	25.8	25.0	26.1	26.4	24.3	25.5	24.7	25.8	26.1
4H	25.5	26.6	25.9	26.9	27.2	25.1	26.2	25.5	26.5	26.9
6H	26.1	27.1	26.5	27.5	27.8	25.7	26.6	26.1	27.0	27.4
8H	26.4	27.3	26.8	27.6	28.0	25.8	26.7	26.3	27.1	27.5
12H	26.5	27.3	26.9	27.7	28.1	25.9	26.7	26.3	27.1	27.6
8H 4H	25.7	26.6	26.2	27.0	27.4	25.4	26.3	25.8	26.7	27.1
6H	26.6	27.3	27.0	27.7	28.2	26.1	26.9	26.6	27.3	27.7
8H	26.9	27.5	27.4	28.0	28.5	26.4	27.0	26.8	27.5	28.0
12H	27.1	27.7	27.6	28.1	28.6	26.5	27.1	27.0	27.5	28.0
12H 4H	25.8	26.6	26.2	27.0	27.4	25.4	26.3	25.9	26.7	27.1
6H	26.6	27.3	27.1	27.7	28.2	26.2	26.9	26.7	27.3	27.8
8H	27.0	27.5	27.5	28.0	28.5	26.5	27.1	27.0	27.5	28.0
Variations with the observer position at spacings(CIE Pub.117):										
S = 1.0H	+ 0.1 / - 0.2					+ 0.1 / - 0.2				
1.5H	+ 0.2 / - 0.3					+ 0.2 / - 0.3				
2.0H	+ 0.1 / - 0.3					+ 0.1 / - 0.3				

CIE Pub.117, 310.9 lm Total Lamp Luminous Flux Correct (8log(F/F0) = -4.1)
Area: 0.022 m2

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Dillon
Test Date:22 July 2021

γ Range: 0 - 180DEG
γ Interval: 2.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:6.950m [K=1.0000]
Remarks:

UTILIZATION FACTORS TABLE

NAME: C-SFR-F2222S12-HB-24CC-RGB-WM-84-16.5W-83.3-5	TYPE:	WEIGHT: 0.590kg/m
SPEC.:	DIM.: 22*22mm	SERIAL No.:
MFR.: CLEAR	SUR.: 22*1000mm	Shielding Angle:

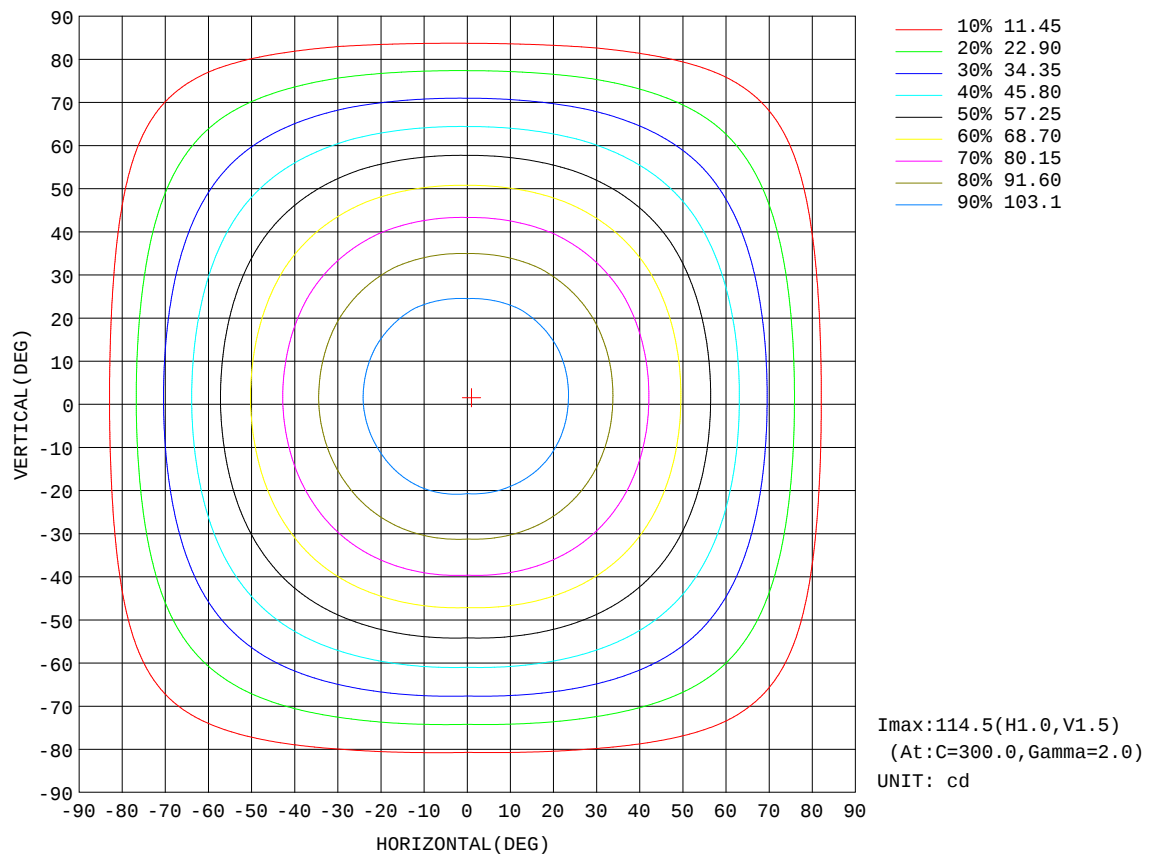
REFLECTANCE										
Ceiling	0.8	0.8	0.8	0.7	0.7	0.7	0.5	0.5	0.5	0
Walls	0.7	0.5	0.3	0.7	0.5	0.3	0.7	0.5	0.3	0
Working plane	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0
ROOM INDEX	UTILIZATION FACTORS(PERCENT) k(RI) x RCR = 5									
k = 0.60	61	49	41	61	48	41	59	48	41	34
0.80	72	59	51	71	59	51	69	58	51	43
1.00	81	69	61	80	68	60	77	70	60	52
1.25	89	77	69	87	76	69	84	75	68	60
1.50	94	83	75	92	82	75	89	80	74	65
2.00	102	92	85	100	91	84	96	88	82	74
2.50	106	97	91	104	96	90	99	93	87	78
3.00	110	102	96	107	100	95	103	97	92	83
4.00	114	108	103	112	106	101	107	102	98	88
5.00	117	111	107	114	109	105	109	105	102	91
ROOM INDEX	UF(total)									Direct
According to DIN EN 13032-2 2004										
Suspended										
SHRNOM = 1.25										

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Dillon
Test Date:22 July 2021

γ Range: 0 - 180DEG
γ Interval: 2.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:6.950m [K=1.0000]
Remarks:

ISOCANDELA DIAGRAM

NAME: C-SFR-F2222S12-HB-24CC-RGB-WM-84-16.5W-83.3- TYPE :		WEIGHT: 0.590kg/m
SPEC.:	DIM.: 22*22mm	SERIAL No.:
MFR.: CLEAR	SUR.: 22*1000mm	Shielding Angle:

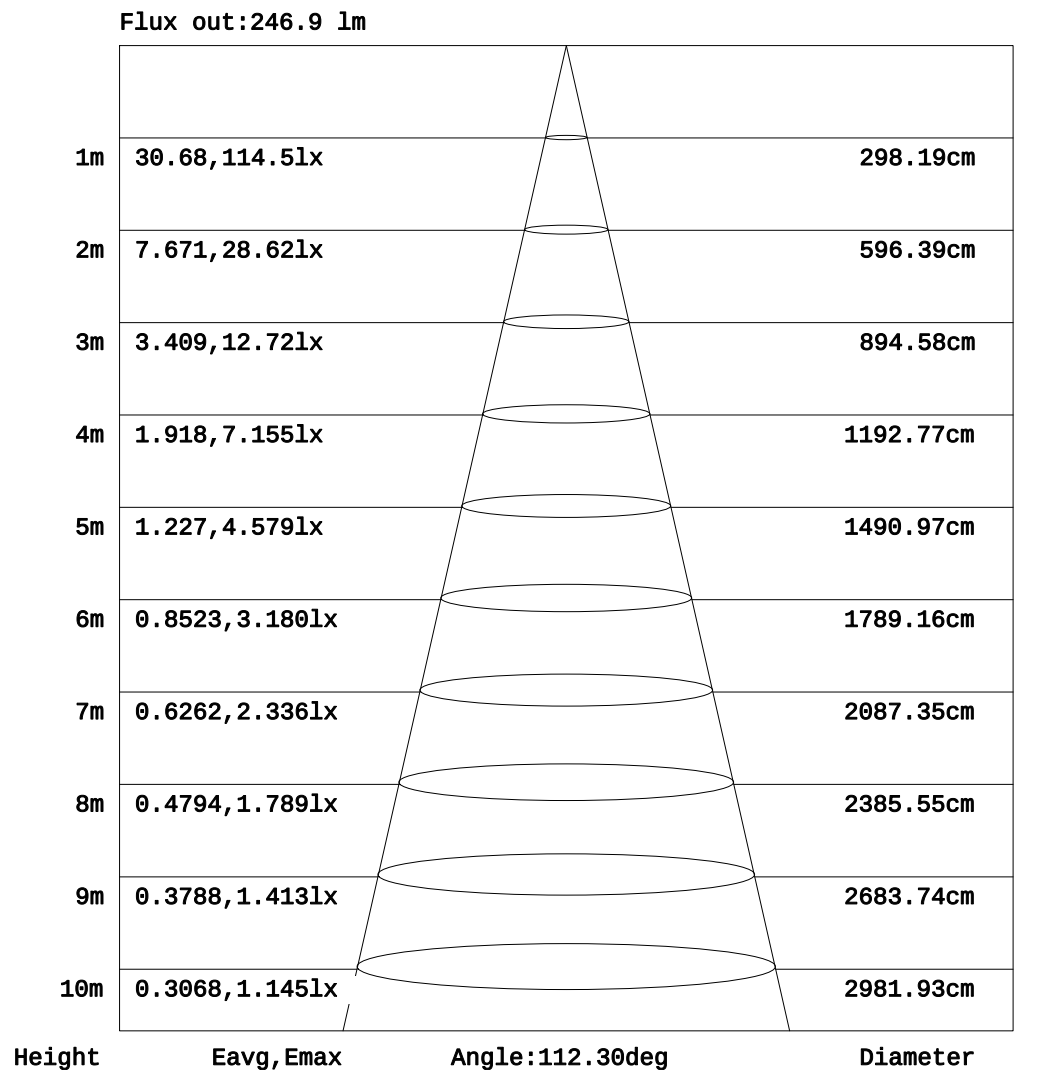


C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Dillon
Test Date:22 July 2021

γ Range: 0 - 180DEG
γ Interval: 2.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:6.950m [K=1.0000]
Remarks:

AAI Figure

NAME: C-SFR-F2222S12-HB-24CC-RGB-WM-84-16.5W-83.3-TYPE:	WEIGHT: 0.590kg/m
SPEC.:	SERIAL No.:
MFR.: CLEAR	Shielding Angle:

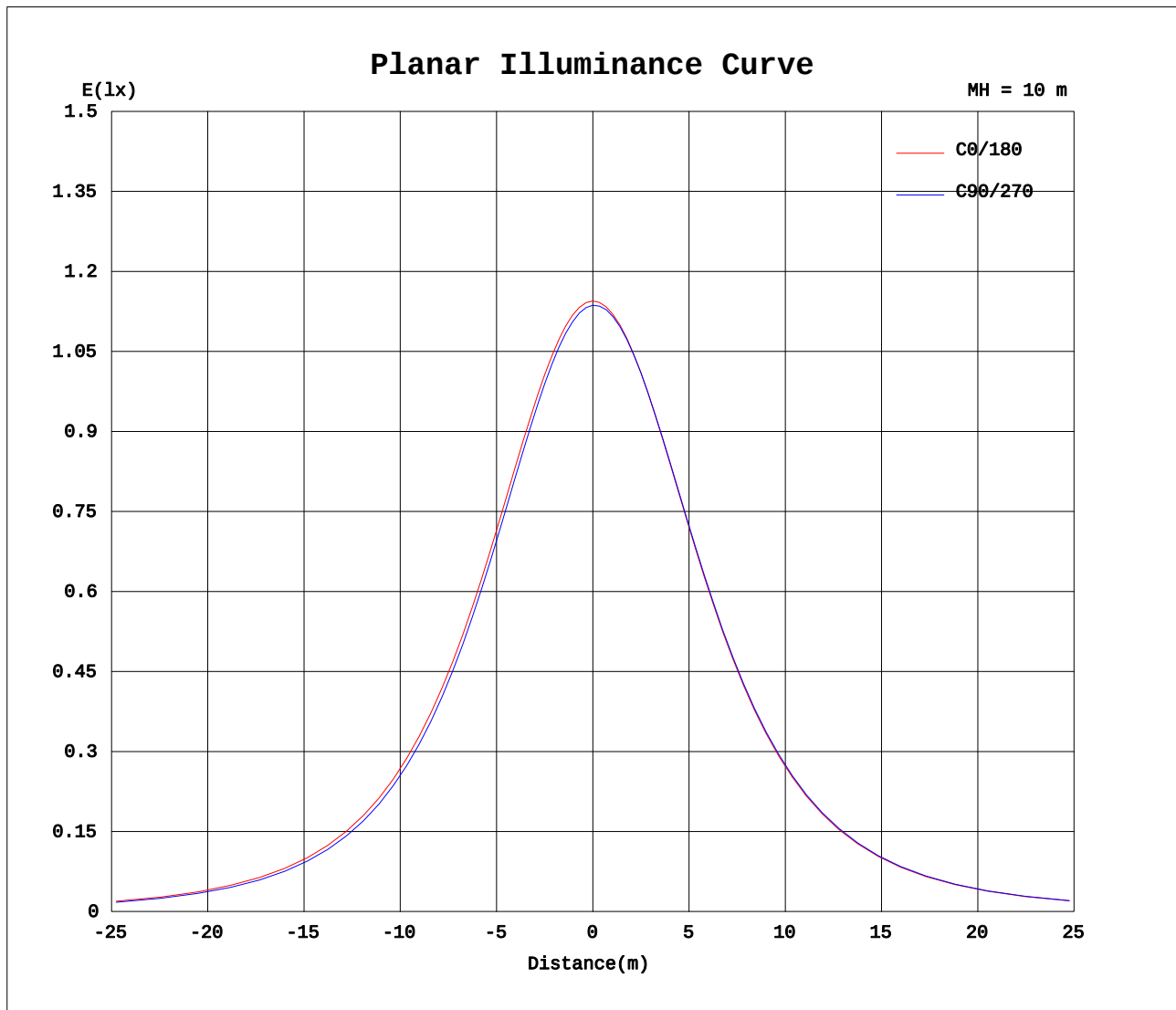


Note:The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature:25.3DEG
 Operators:Dillon
 Test Date:22 July 2021

γ Range: 0 - 180DEG
 γ Interval: 2.0DEG
 Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.446
 Humidity:65.0%
 Test Distance:6.950m [K=1.0000]
 Remarks:

Planar Illuminance Curve



C Range: 0 - 360DEG
 C Interval: 30.0DEG
 Test Speed: HIGH
 Temperature: 25.3DEG
 Operators: Dillon
 Test Date: 22 July 2021

γ Range: 0 - 180DEG
 γ Interval: 2.0DEG
 Test System: EVERFINE G0-2000B_V1 SYSTEM V2.00.446
 Humidity: 65.0%
 Test Distance: 6.950m [K=1.0000]
 Remarks:

LUMINOUS DISTRIBUTION INTENSITY DATA

NAME: C-SFR-F2222S12-HB-24CC-RGB-WM-84-16.5W-83.3-TYPE:	WEIGHT: 0.590kg/m
SPEC.:	SERIAL No.:
MFR.: CLEAR	Shielding Angle:

Table--1

UNIT: cd

C(DEG) γ (DEG)	0	30	60	90	120	150	180	210	240	270	300	330						
0	114	114	114	114	114	114	114	114	114	114	114	114						
5	114	114	113	113	114	114	114	114	114	114	114	114						
10	112	112	111	111	112	112	113	113	113	112	113	113						
15	110	110	109	108	109	110	111	111	111	111	111	111						
20	106	105	104	104	105	106	107	107	107	107	107	107						
25	102	102	101	99.9	101	102	103	104	104	103	104	104						
30	96.1	95.2	94.1	93.2	94.4	95.5	96.9	97.8	98.2	97.5	97.9	97.3						
35	91.3	90.2	89.2	88.1	89.4	90.6	92.1	93.1	93.5	92.8	93.2	92.6						
40	83.2	82.0	80.9	79.6	81.0	82.4	84.1	85.2	85.6	84.9	85.3	84.6						
45	77.3	76.1	74.9	73.6	75.0	76.5	78.3	79.5	79.8	79.1	79.5	78.8						
50	67.9	66.7	65.4	64.1	65.5	67.1	69.1	70.2	70.6	69.9	70.2	69.6						
55	61.3	60.1	58.9	57.6	59.0	60.6	62.6	63.7	64.1	63.4	63.7	63.0						
60	51.1	50.0	48.8	47.5	48.9	50.5	52.5	53.6	54.0	53.3	53.5	52.8						
65	44.2	43.2	42.0	40.7	42.0	43.7	45.6	46.7	47.0	46.5	46.6	45.8						
70	33.5	32.7	31.4	30.4	31.6	33.2	35.1	36.2	36.6	36.0	36.0	35.2						
75	26.3	25.6	24.4	23.3	24.6	26.0	27.9	29.0	29.3	28.9	28.9	27.9						
80	15.3	14.7	13.6	12.8	13.8	15.2	16.8	18.0	18.5	18.1	18.0	16.9						
85	8.06	7.58	6.65	5.91	6.86	8.06	9.54	10.6	11.2	10.9	10.7	9.65						
90	0.49	0.85	0.76	0.20	0.85	1.19	1.22	1.73	2.04	1.85	1.66	0.92						
95	0.47	0.77	0.65	0.10	0.73	1.12	1.22	1.15	0.80	0.49	0.56	0.51						
100	0.41	0.65	0.54	0.10	0.59	1.02	1.22	1.08	0.71	0.39	0.49	0.46						
105	0.39	0.59	0.51	0.03	0.50	0.96	1.16	1.03	0.68	0.36	0.45	0.43						
110	0.37	0.57	0.41	0.04	0.44	0.88	1.09	0.74	0.59	0.30	0.40	0.21						
115	0.41	0.56	0.39	0.02	0.40	0.81	1.05	0.72	0.55	0.29	0.34	0.23						
120	0.46	0.52	0.25	0.02	0.33	0.79	0.97	0.67	0.14	0.00	0.06	0.23						
125	0.44	0.51	0.26	0.01	0.31	0.75	0.91	0.66	0.17	0.00	0.08	0.24						
130	0.44	0.47	0.25	0.02	0.28	0.69	0.83	0.59	0.17	0.02	0.06	0.27						
135	0.42	0.45	0.23	0.02	0.28	0.65	0.78	0.55	0.18	0.04	0.10	0.30						
140	0.40	0.41	0.23	0.04	0.28	0.57	0.68	0.50	0.19	0.04	0.11	0.26						
145	0.39	0.37	0.23	0.02	0.28	0.52	0.62	0.44	0.19	0.03	0.03	0.25						
150	0.34	0.33	0.21	0.04	0.27	0.48	0.51	0.39	0.18	0.04	0.06	0.26						
155	0.33	0.33	0.22	0.06	0.26	0.42	0.47	0.37	0.19	0.08	0.05	0.24						
160	0.30	0.26	0.18	0.09	0.24	0.34	0.39	0.31	0.19	0.07	0.09	0.25						
165	0.25	0.25	0.19	0.11	0.21	0.32	0.31	0.28	0.19	0.13	0.09	0.21						
170	0.21	0.20	0.15	0.14	0.21	0.24	0.25	0.22	0.18	0.13	0.08	0.18						
175	0.17	0.17	0.13	0.13	0.19	0.21	0.21	0.20	0.18	0.15	0.11	0.18						
180	0.17	0.16	0.15	0.15	0.13	0.16	0.13	0.18	0.15	0.14	0.14	0.16						

C Range: 0 - 360DEG
C Interval: 30.0DEG
Test Speed: HIGH
Temperature:25.3DEG
Operators:Dillon
Test Date:22 July 2021

γ Range: 0 - 180DEG
γ Interval: 2.0DEG
Test System:EVERFINE G0-2000B_V1 SYSTEM V2.00.446
Humidity:65.0%
Test Distance:6.950m [K=1.0000]
Remarks: